NON-WETLAND DISCOVERY AND DOCUMENTATION FOR PARCEL 033027-21-0180

AS PRE-CONDITION FOR

MARINERS INVERSTORS PROPOSED MAJOR SUBDIVISION

OWNERS

Mariners Investors

% Zenovic & Associates
301 East 6th Street, Suite 1
Port Angeles, WA 98362

CITY OF SEQUIM DEPARTMENT OF COMMUNITY DEVELOPMENT

CITY OF SEQUIM CODE 18.80.060 AND 17.12.020. (A)

Field Investigation Conducted By:

W. David Loggy
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P.O. Box 2347
Port Angeles, WA 98362
November, 2018

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SUMMARY

The City of Sequim, WA wetland inventory identifies a Category IV Wetland in the northwest area of the Mariners Investment proposed land development project. The landform associated with the delineated inventory wetland is a shallow concave 15 percent sloping swale and a slope area sloping 15 percent. Both landforms slope to the northeast. The Sequim Department of Community Development is requiring Mariners Investment to have the inventory wetland re-evaluated to verify the presence / absence of a regulated wetland as indicated on the map. An onsite field investigation analysis by Loggy Wetlands & Soil Consulting determined that both landforms lack hydric soils and wetland hydrology. The landforms have wetland weighted facultative plants and facultative upland plant. There more sample plots with Facultative Upland plants than plots with facultative wetland weight plants. The field data definitely provided that 2 out of the 3 wetland criteria are absent to qualify the area as a wetland. Because of the definite lack of least two wetland criteria, the inventory wetland shown on the inventory map is not a wetland site.

The photo on the cover page is view looking northwest across the project site toward the northeast corner of Water View Dr.

WETLAND CRITICAL AREA STUDY

CONSULTING COMPANY:

Loggy Soil and Wetland Consulting
W. David Loggy, CPSS
P. O. Box 2347, Port Angeles, WA 98362

CRITICAL AREA DETERMINATIONS:

Determination of Present or Absence of regulated Wetland

PROPERTY OWNER

Mariners Investors
% Zenovic & Associates
301 East 6th Street, Suite 1
Port Angeles, WA 98362-6720

REASON FOR STUDY:

The City of Sequim Department of Community Development is requiring as part of Mariners Investors final subdivision plan to evaluate and verify the **presence / absence** and regulatory status of a portion of an inventoried Category IV Wetland. The wetland identified in September, 2018 by Westech Company is listed as Wetland 27-B. The portion of Wetland 27-B subject to the present study and evaluation for the proposed development site is listed by Westech as portion 27-B-3 and 27-B-4 of Wetland 27-B (Insert Map in Appendix I).

PROJECT SITE LOCATION:

Investigation Area Includes Parts of Parcels: 033027-21-0180, 21-0140, 21-0130 and 21-0050.

General Location: East side of Water View Dr. -
Wetland identified as 27-B. Portion of wetland inventoried to evaluate is 27-B-3 and 27-B-4[1]

Legal Location: NE ¼, NW ¼ of Section 27, Township 30 North, Range 03 West, W.M., Clallam County, Sequim, WA.

APPROXIMATE SIZE OF WETLAND 27-B-3, 27-B-4: – 1.25 Acres

[1] G. Bradford Shea, Ph.D., Daniel Brooks, Anthony Grim, Charles Tanner. Wetland Mapping and Analysis. City of Sequim, Clallam County Washington. Volume 1. Main Report, Submitted September 2011.Westech Company.

ROUTE INSTRUCTIONS:

When traveling from Sequim take Highway 101 east and turn left onto Whitefeather Way. Follow Whitefeather Way and turn left onto W. Sequim Bay Rd. then turn left on Mariners View Dr. Continue on Mariners View Drive to where it turns south. At the turn cut across the pasture in a westerly direction to Water View Dr. The parcel is on the east side of Water View Dr.

Alternative Route is to take East Washington Street east to the Simdar's Rd. and turn left and the turn right onto Washington Harbor Loop. Next turn on left onto Lofgin Rd. and follow it to Keeler Rd. Follow Keeler Rd. and turn left onto Fernbrook Rd. Continue on Fernbrook Rd. through the Jones Farm Rd. intersection and then right onto the 2nd Jones Farm Rd intersection. Then turn left onto Water View Dr. and then turn south (right) on the road. The parcel is on the east side (left) of the street. **(Figure 1, Appendix I)**.

PRE-EXISTING INVENTORIES:

The United States Fish and Wildlife (USFW) Nation Wide Inventory (NWI) does not recognize this wetland nor is the wetland identified on the Washington State wetland maps. As there is no state wetland identified on the parcel the wetland is not classified as being a high conservation wetland. Clallam County data base does not show the wetland in its map data base. The wetland is located on the City of Sequim's Department of Community Development's wetland map.

WESTECH IDENTIFIED CATEGORY IV WETLAND:

The City of Sequim in the years 2005, 2006, 2008 and 2011 contracted with Westech to do a reconnaissance and verification of wetlands within the city limits of Sequim. The reconnaissance and verification inventory for Wetland 27-B with a segment of the wetland titled as 27-B-3, 27-B-4 occupying an area between the east sides of Water View Dr. and West Sequim Bay Road. Westech's reconnaissance and verification inventory identified 27-B as a Category IV Wetland **(Figure 2)**. None of the reports, I reviewed that were submitted to the City of Sequim provided any actual field plot data. A general description of vegetation and surface hydrology flow was provided for Wetland 27-B. Westech Company used the soil maps obtain from the Web Soil Survey provided by the National Cooperative Soil Survey (NRCS). The soils mapped by the NRCS soil survey shows the Yeary series (soils) as the soil associated with Wetland 27-B. The Yeary soils consist of moderately deep, moderately well drained soils and are not hydric. The end result is the Westech made wetland determination mainly by vegetative cover, potential surface hydrology and landscape configuration.

Figure 2

METHOD AND APPROACH:

A two-Level Assessment was used to identify the wetland on Parcel 033027-21-0180. The first level of assessment included review of existing information conducted to develop background knowledge of physical features, and to identify the potential for wetland occurrence on the parcel. The resource documents available for preliminary review of the plots conditions included: USDA Soil Conservation Service (SCS), "Soil Survey of Clallam County Area Washington" and Clallam County Map Data, 2015, Clallam County and Google 2018 aerial photography, and the City of Sequim Department Community Development Wetland Map.

PHYCIAL CHARACTERISTICS OF THE PARCEL:

The parcels that are part of the Mariners Planned Development area consists of a sloping terrace area that slopes in a north easterly direction. Slopes range in gradient from 5 to 15 percent towards W. Sequim Bay Road and Sequim Bay. Slope land forms range from straight single slopes to a shallow concave swale.

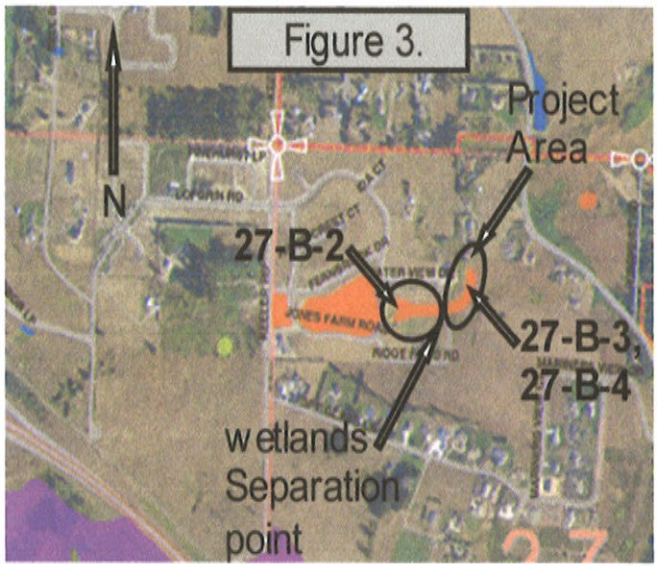
Presently the parcels support a variety of plant cover consisting of areas of dense growth of the invasive species, Rubus procerus (Himalayan blackberry) located along the property lines of the northwest corner. The northwest corner of the property has a high infestation of Galium aparine (Gleavers bedstraw), Cirsium sp. (Canada and bull thistle) and Leucanthemum vulgare (oxeye daisy). The remaining area of the parcels consists of various plant communities of non-native and native forbs and grasses.

The Clallam County Soil survey identifies the soils on the parcel as the Yeary Series. Yeary soils consists of moderately deep, moderately well drained soils that formed in reworked marine sediments over dense, very compact till. The upper 9 inches of the soil surface layers have a matrix of dark brown (10YR 4/3) gravelly loams while the 6-inch-thick subsurface soil matrixes are yellowish brown (10YR 5/3) gravelly loams with few fine distinct yellowish brown (10YR 5/6) redox concentrations. Subsoil layers up to 26 inches thick have yellowish brown (10YR 5/4) gravelly clay loams matrixes with few to common distinct dark yellowish brown (10YR 4/6) redox concertations. The Yeary soils are not classified as hydric soils as they have an Oxyaquic condition, a condition where the soils are only periodically saturated and soil reduction does not take place. Oxyaquic conditions may or may not have redoximorphic. Yeary soils are not classified as hydric soils.

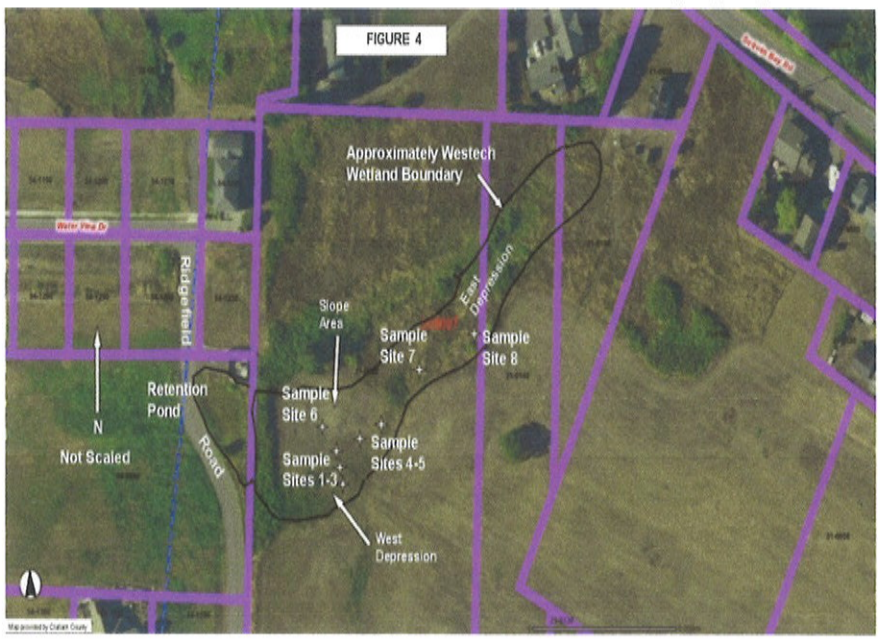
PLOTS ANALYSIS IN 2018 OF WESTECH WETLAND ON PARCEL 033027-21-0180:

The Category IV wetland area on Mariner's property was re-investigated from October 29 to November.5, 2018. The study was restricted to the wetland area on the parcel identified 2011.

The Westech wetland shown in **Figure 3** is two separate landforms that represents two of three segment of wetland 27-B. The two areas represent wetland 27-B-2, 27-B-3 and 27-B-4. Wetland segment 27-B-2 is bisected by a human-made feature (Water View Dr.) from segments 27-B-3 and 27-B-4. When water discharges in only one direction from one wetland to the other wetland on the other side of the human-made feature the wetland areas are considered two separate wetlands (Hruby, T., 2014)[2]. Under this rule each wetland has to be classified and rated on it on merits of water quality, wetland hydrology and wildlife habitat. The retention pond abutting the east side of Water View Dr.as well as the wetland on the east side of the pond and west property line of the parcel would be composed one wetland under the Westech inventory **(Figure 3).** The retention pond on the eastside of the north-south section of Water View Dr. abuts the west property line of parcel 033027-21-0180. The west portion of Westech wetland on Parcel 033027-21-0180 abuts the west edge of Water View Dr. and includes the retention pond.



The area of Westech wetland on the parcel consists of three separate landforms. Two areas one concave and one straight slope area abuts the east toe slope of the retention



[2] Hruby, T. *Washington State Wetland Rating System for Western Washington:* 2014 Update. (Publication #360-407-6600. Olympia, WA: Washington Department of Ecology. p.23

pond. The swale in this area has a very low cross section with slopes ranging from1 to 5 percent. The swale has a slope gradient of 15 percent to the north east. Retention pond overflow from the pond riser pipe discharges to this very shallow swale and its poorly defined shallow segmented vegetated drainage. This swale ends in a bowl immediately east of Sample Point 5 **(Figure 4)**. The slope landform is a straight slope with a 15 percent gradient on the north side of the swale and terminates at the same bowl area as the swale area. Six sample plots were established within the two areas. Five plots were established on the swale and one on the slope area **(Figure 4)**.

The third landform is another swale. The head of this swale is approximately 30 feet northeast of the northeast corner of the bowl. This swale is as wide as the other swale but ranges from three (3) to six (6) feet deep to its vegetated bottom. The swale does not have any exposed soil erosion. The mouth of the swale flares out onto a ten (10) percent slope along the east end of a tree wind break just west of West Sequim Bay Road **(Figure 4)**. The insert map (Westech Wetland Map of Section 27) defines the start of the first swale as 27-B-3 and the end of second swale as 27-B-4.

Vegetation: Presently (Nov 2018) the swales and slope landforms areas have shrubs and herbaceous forbs and grasses that constitutes Facultative Upland (FACU) and Facultative (FAC) species[3]. The dominate vegetation on the five (5) sample points on the swale landform and the one plot on the slope landform are presented on Table 1 below. Sample plots 4 and 5 were the only sample plots on the swale that has FAC vegetation. The other thee sample plots have FACU vegetation. Sample plot 6 on the slope landform has dominant FACU species cover. Gleavers bedstraw **(Figure 5)** is a winter annual and is green and Oxeye daisy basal leaves are still green but their flowering stalks are dead. Some grasses have new green growth but most grass stalks and seed heads are dead **(Figure 5)**. Soil auger samples taken just inside the edge of the Rubus procerus (Himalayan blackberry) indicated the same soils as in the non-shrub portion of the swale. Vegetative cover for each plot can be reviewed in the field data sheet in Appendix II. Additional photos of the site are presented in Appendix IV.


Figure 5

Non-dominant species include Poa sp. bluegrasses, Bromus sp. (brome grass), Cirsium arvense (Canada thistle) and Plantago Major (broadleaf plantain). Some areas on both the landforms have dense stands of Canada thistle. The percent cover of Canada thistle in the second swale varies and occurs in scattered patches. The area along the west property line of the parcel from the south end of the retention pond to the northwest corner of the parcel is covered with a dense stand of Rubus procerus (Himalayan blackberry). At the north end of the retention pond another dense stand of Himalayan blackberry (FACU) grows in a line towards the east on the property.

[3] OBL (Obligate Wetland Plants – Almost always occur in wetlands.
FACW (Facultative Wetland Plants) – Usually occur in wetlands, but may occur in non-wetlands.
FAC (Facultative Wetland Plants) – Usually occur in wetlands and non-wetlands. **FAC plants are now weighted as wetland plants in determining if wetland vegetation is present on an area.**
FACU (Facultative Upland Plants) – usually occur in non-wetlands, but may occur in wetlands.

TABLE 1

WEST SWALE LANDFORM			
Species	Scientific Name	Common Name	Indicator Species
	Galium aparine	Gleavers bedstraw	FACU
	Agrostis sp.	Bentgrasses	FAC
	Festuca arundinacea	Tall fescue	FAC
	Festuca pratensis	Meadow fescue	FACU
	Dactylis glomerata	Orchard grass	FACU
	Lolium perenne	Perennial ryegrass	FAC
SLOPE LANDFORM			
Species	Leucanthemum vulgare	Oxeye daisy	FUCU
	Festuca pratensis	Meadow fescue	FACU
	Festuca rubra	Red fescue	FAC
EAST SWALE LANDFORM			
Species	Bromus sitchensis	Alaska Brome	FACU
	Dactylis glomerata	Orchard grass	FACU
	Festuca pratensis	Meadow fescue	FACU
	Galium aparine	Gleavers bedstraw	FACU
	Lolium multiflorum	Italian ryegrass	FACU
	Lolium perenne	Perennial ryegrass	FAC
	Rubus procerus	Himalayan blackberry	FACU
	Vicia americana	American vetch	FACU

USDA Soil Survey Soils: The Clallam County Soil Survey identifies that the Yeary Series (soil) is located on the parcel. The Yeary soils are not considered hydric soils. Typically, Yeary soils have gravelly loam surfaces with gravelly loam and gravelly clay loam subsoils that range from 20 to 40 to dense till. The subsurface soil layer has few fine distinct yellowish brown redoximorphic (redox) concentrations in the matrix (solid phase of the soil). Redox concentrations are bodies of accumulation of Fe-Mn oxides. The subsoil layer has few, fine to moderate distinct dark yellowish-brown redox concentration. Yeary soils are **classified** as having a feature described as oxyaquic. A soil is oxyaquic when it is periodically saturated but not long enough to produce soil reduction resulting in hydric soils.

Project Soils: The soils on the Westech 27-B-3 and 27-B-4 site are not the Yeary soils but have some similar characteristics. The soils are moderately deep, moderately will to well drain soils. The project soils are similar in color but have fewer redox concentrations from the Yeary soils. The soils at the other plots have fewer (zero to less than 2%) fine distinct redox concentrations than the Yeary soils. The soils at all the sample plots have hue colors of 7.5 YR, 10YR, and 2.5Y and high values of 4 and 5 and chromas of 3 like the Yeary soils. The soils at the sample plots are generally shallower in depth on both landforms ranging from 12 to 20 inches to dense compact till compared to the 20 to 40 inches range to till like the Yearly soils. The soil sample on plot 5 is 12 inches deep to bedrock or a large glacial boulder. All the soils in the swales have loams, fine sandy loams, loamy fine sand, gravelly to very gravelly loamy sands and gravelly sandy loams. The sample plot 6 soil on the slope landform has similar clayey textures like the Yeary soils but lacks gravel particles. Sample plots 1, 5and 8 have no redox concentrations as did

several auger test sites. The soils in the swales have to have soil saturation due to the nature of the landform being an area for collecting up slope run off in addition to any over flow from the retention pond. Due to the bright soil colors and low percentages of redox concentration the soils would be considered to have oxyaquic conditions like the Yeary soils.

Hydrology: At the time of sampling there was no saturation, standing water or water table present in the soils. The precipitation in 2018 is below normal for this time of year on the Olympic Peninsula. The present or lack of wetland hydrology is discussed below under the heading of wetland - non-wetland determination.

WETLAND – NON-WETLAND DETERMINATION

It is the decision of David Loggy of Loggy Soil and Wetland Consulting that after conduction the field investigation and evaluation of the field data that the swales and slope landforms are not wetlands. Documentation supporting the non-wetland decision is presented below.

For a land area to be identified and classified as a wetland the land area must have present all three (3) wetland indicators. The wetland indicators are hydrophytic vegetation, hydric soils and wetland hydrology. The following describe the indicators:

- Hydrophytic plants are plants that require or can tolerate prolong inundation or soil saturation during the growing season.
- Hydric soils are soils formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic condition and soil depletions in the upper part of the soils.
- Wetland hydrology indicators are used in combination with hydrophytic vegetation and hydric soils to provide observable evidence of episodes of inundation or soil saturation over a period of years to produce wetland plant communities and hydric soil morphology.

Vegetation - The analysis determined that there is only a dominance of facultative and facultative upland vegetation on the landforms.

Only sample sites 4 and 5 have a dominance of facultative (FAC) wetland vegetation. The other plot sites have dominant vegetation consisting of facultative upland (FACU) species. In any project sites it is not unusual to have a dominance of facultative (FAC) vegetation on upland land sites. This is due to the relative recent reclassification of many grass species to FAC status because they are now considered to be more adapted to soil saturation or inundation[4]. **As long as there are still presences of non-hydric soils or no wetland hydrology or both, having a dominance of FAC species on plot does not make the site a wetland.**

Soils – The analysis determined that neither the swale nor the slope areas have hydric soils.

[4] U.S. Army Corps of Engineers. *Western Mountains, Valleys, and Coast 2014 Regional Wetland Plant List.* Lichvar, R.W., M. Bulterwick, N.C., Melvin, and W.N. Kirchner. 2014*:* The National Wetland Plant List: 2014 Update of Wetland Plant Ratings. Phytoneuron 2014-41: 1-40.

The project area soils are located in the USDA Land Resource Region (LRR) A. Hydric soil indicators for LRR A are defined in the Field Indicators of Hydric Soils in the United State (A Guide for Identifying and Delineating Hydric Soils, Version 8.1,2017.[5] None of the sample plot site soils within the swale or on the slope as well as other auger test sites met any of the hydric soil indicators listed in the guide for LRR A. An analysis of the soils to the different hydric soil indicators in LRR A is documented in Appendix C.

Hydrology: - Conclusion is that the two landform sites do not have wetland hydrology.

A feature of the Yeary soils is that it has a perched water table above densic material (till). The Yeary soil colors indicates that a perched water table is present long enough to produce redox concertations but not long enough cause soil depletion required to produce hydric soil conditions.

There was no water table, soil saturation or inundation during the field investigation period. The presence of few distinct redox concertations in all the soil matrixes and minor depletion in one of the soils indicate the presence of a perched water table and/or soil saturation during some period of time in the early part of the growing season, similar to the Yeary soils. It is only logical that the swale and slope receive precipitation but the swale also receives any overflow from the retention pond during the winter period and early growing season. Similar to the Yeary soils, the soil matrix colors and the few redox concentrations in the swale and slope soils is indicating that the duration of any water table and/or soil saturation is periodic and not long enough during the early growing period to produce soil matrix depletion resulting in hydric soil conditions and morphology. Table 2 below shows absences or present of any wetland criteria at each plot and comparison of wetland criteria between sample plots

TABLE 2

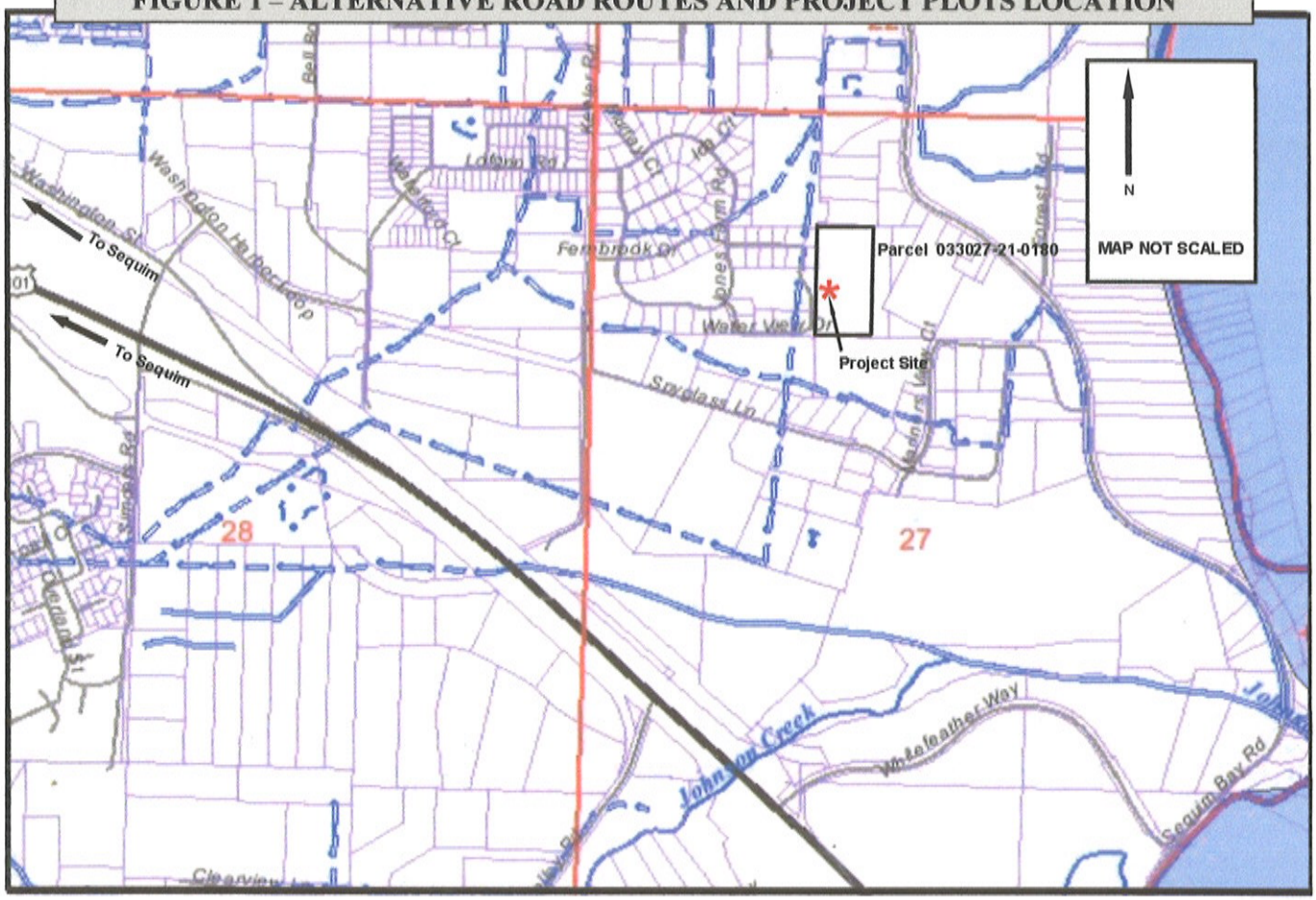
Wetland Criteria	Plot1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6
Hydrophyte Vegetation	No	No	No	Yes	Yes	No
Hydric Soils	No	No	No	No	No	No
Wetland Hydrology	No	No	No	No	No	No
Wetland Site	No	No	No	No	No	No

[5] United States Department of Agriculture, Natural Resources conservation Service. 2016. *Field Indicators of Hydric Soils in the United States, Version 8.0. L.M. Vasilas, F.W. Hurt, and J.F. Berkowitz (eds.).* USDA, NRCS, in cooperation with National Technical Committee for Hydric Soils.

APPENDIX I

ALTERNATIVE ROAD ROUTES AND PROJECT LOCATION

FIGURE 1 – ALTERNATIVE ROAD ROUTES AND PROJECT PLOTS LOCATION



WESTECH INSERT MAP OF SECTION 27

Figure 6. Section 27 Wetland Map

Westech Company 2011
Sources: Clallam County 2011

APPENDIX II

FIELD DATA FORMS

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Regions

Project/Site: MARINERS OUTLOCK PRE 18-005		City/County: /Sequim/Clallam	Sampling Date: OCT 29, 2018
Applicant/Owner: Mariners Investors		State: WA	Sampling Point: 1
Investigator(s): W. David Loggy, Loggy Soil & Wetland Consulting		Section 27, Township 30N, Range 03W:	
Landform (hillslope, terrace, etc): Sloping Terrace		Local relief (concave, convex, none): Concave	Slope (%) 15
Subregion (LRR): A	Lat: N 48.069243°	Long: W -123.053168°	Datum: WAS 84
Soil Map Unit Name: Mu 20, Yeary Series	(see any correction in Soil Section)	NWI classification: None	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.) Dryer than normal			
Are vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?		Are "Normal Circumstances" present? Yes ☒ No ☐	
Are vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?		(If needed, explain any answers in Remarks)	

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ☐	No ☒	Is the Sampled Area Within a Wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		
Remarks:				

VEGETATION – Use scientific names of plants

Trees Stratum (Plot size:30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' Radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 1.64 Radius)			
1.Galium aparine	40	Yes	FACU
2. Agrostis sp	20	Yes	FAC
3. Festuca arundinacea	15	Yes	FAC
4. Festuca pratensis	10	Yes	FACU
5. Poa sp	5	No	FAC
6. Bromus sp	5	No	FACU
7.Cirsium arvense	5	No	FACU
		100 =Total Cover	
Woody Vine Stratum (Plot size: 10' Radius)			
1.			
2.			
		=Total Cover	
% Bare Ground in Herb Stratum			

Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC:	(A) 2
Total; Number of dominant Species Across All Strata:	(B) 4
Percent of Dominant Species That Are OBL, FCW, or FAC:	(A/B) 50

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species		X 1 =
FACW species		X 2 =
FAC species		X 3 =
FACU species		X 4 =
UPL Species		X 5 =
Column totals	(A)	(B)
Prevalence index = B/A =		

Hydrophytic Vegetation Indicators:

- ☐ 1. Rapid Test for Hydrophytic Vegetation
- ☒ 2.Dominance Test is >50%
- ☐ 3. Prevalence Index is ≤3.0[1]
- ☐ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5. Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: **Galium on site is aparine because it has leaves with short-pointed tips. The Galium aparine is a winter annual and is in green growth at the time of sampling.**

SOIL

Sampling Point: 1

Profile Description: (Describe t o the depth needed to document the indicators or confirm the absence of indicators)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Textures	Remarks
0-4	**7.5YR 3/3**						**l**	**1 f gr structure; 3f,m,c roots; aw bndy**
4-8	**7.5YR 5/3**						**ls**	**2 m gr structure; 1vf roots; aw**
8-13	**7.5YR 3/3**						**gls**	**1f sbk part to 1fgr structure; 1vf roots; cw bndy**
13-18	**7.5YR 3/3**						**gsl**	**1 m sbk part to 1 m gr structure; 1 vf roots**
18								**Dense compact till requiring chipping with tile spade**

[1]**Type:** C=Concentrations, D=Depletion. RM=Reduced Matrix. CXS=Covered or Coated Sand Grains. [2]**Location**: Pl=Pore lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (SS)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks [3]

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: **Compact till**
Depth (inches): **18 inches**

Hydric Soil Present? Yes ☐ No ☒

Remarks:
The soil at this site is generally more sandy than the Yeary Series.

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except **MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1`) **(LRR A)**
- ☐ Other (Explain in remarks)

Secondary Indicators (2 or more required)

- Water Stained Leaves (B9) **(MRLA 1, 2, 4A and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC=Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Year is dryer than normal but soils do not have wetland hydric soil Indicators. A retention pond is up slope from the site Theover flow of the retention flows through a shallow vegetated drainage ditch 20 feet north of this site.**

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Regions

Project/Site: MARINERS OUTLOCK PRE 18-005		City/County: /Sequim/Clallam	Sampling Date: OCT 29, 2018
Applicant/Owner: Mariners Investors		State: WA	Sampling Point: 2
Investigator(s): W. David Loggy, Loggy Soil & Wetland Consulting		Section 27, Township 30N, Range 03W:	
Landform (hillslope, terrace, etc): Sloping Terrace		Local relief (concave, convex, none): Concave	Slope (%) 15
Subregion (LRR): A	Lat: N 48.06928°	Long: W 123.05316°	Datum: WAS 84
Soil Map Unit Name: Yeary Series (see any correction in Soil Section)		NWI classification: None	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.) Dryer than normal			
Are vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?		Are "Normal Circumstances" present? Yes ☒ No ☐	
Are vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?		(If needed, explain any answers in Remarks)	

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ☐	No ☒	Is the Sampled Area Within a Wetland? Yes ☐ No ☒
Hydric Soil Present?	Yes ☐	No ☒	
Wetland Hydrology Present?	Yes ☐	No ☒	

Remarks:

VEGETATION – Use scientific names of plants

Trees Stratum (Plot size:30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' Radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 1.64 Radius)			
1.Galium aparine	25	Yes	FACU
2. Agrostis sp.	25	Yes	FAC
3. Dactylis glomerata	15	Yes	FACU
4. Festuca pratensis	15	Yes	FAC
5. Cirsium arvense	10	No	FACU
6. Bromus sp.	5	No	FACU
7. Lolium perenne	5	No	FAC
		100 =Total Cover	
Woody Vine Stratum (Plot size: 10' Radius)			
1.			
2.			
		=Total Cover	
% Bare Ground in Herb Stratum			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: (A) 2
Total; Number of dominant Species Across All Strata: (B) 4
Percent of Dominant Species That Are OBL, FCW, or FAC: (A/B) 50

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species		X 1 =
FACW species		X 2 =
FAC species		X 3 =
FACU species		X 4 =
UPL Species		X 5 =
Column totals	(A)	(B)
Prevalence index = B/A =		

Hydrophytic Vegetation Indicators:

☐ 1. Rapid Test for Hydrophytic Vegetation

☒ 2.Dominance Test is >50%

☐ 3. Prevalence Index is ≤3.0[1]

☐ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ 5. Wetland Non-Vascular Plants[1]

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: Galium on site is aparine because it has leaves with short-pointed tips. **Galium on site is aparine because it has leaves with short-pointed tips. The Galium aparine is a winter annual and is in green growth at the time of sampling**

SOIL

Sampling Point: 2

Profile Description: (Describe t o the depth needed to document the indicators or confirm the absence of indicators)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Textures	Remarks
0-4	**10YR 3/3**						**sl**	**1 f gr structure; 2 m, c & 3 vf, f, roots; cw bndy**
4-10	**10YR 4/3 & 5/3**						**vgsl**	**1 vf sbk structure; 1vf roots; cw bndy**
10-14	**10YR 5/3**						**vgls**	**2 m sbk structure; 1vf roots; cw bndy**
10-17	**10YR 4/3**		**7.5YR 3/4**	**<2**	**C**	**M**	**vgls**	**1 vf sbk structure; gw bndy**
17-17.5	**10YR 4/3**		**7.5YR 3/4**	**<2**	**C**	**M**	**vgls**	**Hard compact till chip out to 1 vf sbk structure**

[1]**Type:** C=Concentrations, D=Depletion. RM=Reduced Matrix. CXS=Covered or Coated Sand Grains. [2]**Location**: Pl=Pore lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (SS)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks [3]

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: **Hard compact till**
Depth (inches): **17 inches**

Hydric Soil Present? Yes ☐ No ☒

Remarks: **The soil at this site is more gravelly and sandy than the Yeary Series**

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except **MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1`) (**LRR A**)
- ☐ Other (Explain in remarks)

Secondary Indicators (2 or more required)

- Water Stained Leaves (B9) (**MRLA 1, 2, 4A and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC=Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Year is dryer than normal but soils do not have wetland hydric soil Indicators. A retention pond is up slope from the site The over flow of the retention flows through a shallow vegetated drainage ditch 20 feet north of this site. Year is dryer than normal but soils do not have wetland hydric soil Indicators. The over flow of the retention flows through a shallow vegetated drainage ditch 10 feet north of this site.**

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Regions

Project/Site: MARINERS OUTLOCK PRE 18-005	City/County: /Sequim/Clallam	Sampling Date: OCT 29, 2018	
Applicant/Owner: Mariners Investors	State: WA	Sampling Point: 3	
Investigator(s): W. David Loggy, Loggy Soil & Wetland Consulting	Section 27, Township 30N, Range 03W:		
Landform (hillslope, terrace, etc): Sloping Terrace	Local relief (concave, convex, none): Concave	Slope (%) 15	
Subregion (LRR): A	Lat: N 48.06928°	Long: W 123.05316°	Datum: WAS 84
Soil Map Unit Name: Yeary Series (see any correction in Soil Section)		NWI classification: None	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.) Dryer than normal			
Are vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?	Are "Normal Circumstances" present? Yes ☒ No ☐		
Are vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?	(If needed, explain any answers in Remarks)		

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ☐	No ☒	Is the Sampled Area Within a Wetland? Yes ☐ No ☒
Hydric Soil Present?	Yes ☐	No ☒	
Wetland Hydrology Present?	Yes ☐	No ☒	

Remarks:

VEGETATION – Use scientific names of plants

Trees Stratum (Plot size:30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' Radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 1.64 Radius)			
1.Galium aparine	25	Yes	FACU
2. Agrostis sp	25	Yes	FAC
3. Dactylis glomerata	15	Yes	FACU
4. Festuca pratensis	15	Yes	FAC
5. Cirsium arvense	10	No	FACU
6. Bromus sp	5	No	FACU
7. Lolium perenne	5	No	FAC
		100 =Total Cover	
Woody Vine Stratum (Plot size: 10' Radius)			
1.			
2.			
		=Total Cover	
% Bare Ground in Herb Stratum			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: (A) 2

Total; Number of dominant Species Across All Strata: (B) 4

Percent of Dominant Species That Are OBL, FCW, or FAC: (A/B) 50

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species		X 1 =
FACW species		X 2 =
FAC species		X 3 =
FACU species		X 4 =
UPL Species		X 5 =
Column totals	(A)	(B)
Prevalence index = B/A =		

Hydrophytic Vegetation Indicators:

☐ 1. Rapid Test for Hydrophytic Vegetation

☒ 2.Dominance Test is >50%

☐ 3. Prevalence Index is ≤3.0[1]

☐ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ 5. Wetland Non-Vascular Plants[1]

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: Galium on site is aparine because it has leaves with short-pointed tips.

SOIL

Sampling Point: 3

Profile Description: (Describe t o the depth needed to document the indicators or confirm the absence of indicators)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Textures	Remarks
0-3	**10YR 3/3**						**l**	**2 m gr structure; 5% ;gr; 3 vf, f, m, 1 c roots; cw bndy**
3-10	**10YR 5/3**						**gsl**	**3 m gr structure; 1vf, c roots; cw bndy**
10-14	**10YR 5/3**						**gls**	**2 m sbk structure; 1vf roots; cw bndy**
14-18	**7.5YR 3/3**		**7.5YR 3/4**	**<2**	**C**	**M**	**gls**	**1 m sbk structure; cw bndy**
18-20	**10YR 5/4**		**7.5YR 3/4**	**<2**	**C**	**M**	**gcl**	**1 f sbk structure**
20								**Dense hard compact till**

[1]**Type:** C=Concentrations, D=Depletion. RM=Reduced Matrix. CXS=Covered or Coated Sand Grains. [2]**Location**: Pl=Pore lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (SS)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks [3]

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: **Dense hard till**
Depth (inches): **20 inches**

Hydric Soil Present? Yes ☐ No ☒

Remarks: **The soil at this site is more sandy than the Yeary Series**

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except **MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1`) (**LRR A**)
- ☐ Other (Explain in remarks)

Secondary Indicators (2 or more required)

- Water Stained Leaves (B9) (**MRLA 1, 2, 4A and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC=Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Year is dryer than normal but soils do not have wetland hydric soil Indicators. A retention pond is up slope from the site The over flow of the retention flows through a shallow vegetated drainage ditch 5 feet north of this site..**

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Regions

Project/Site: MARINERS OUTLOCK PRE 18-005	City/County: /Sequim/Clallam	Sampling Date: OCT 30, 2018	
Applicant/Owner: Mariners Investors	State: WA	Sampling Point: 4	
Investigator(s): W. David Loggy, Loggy Soil & Wetland Consulting	Section 27, Township 30N, Range 03W:		
Landform (hillslope, terrace, etc): Sloping Terrace	Local relief (concave, convex, none): Concave	Slope (%) 15	
Subregion (LRR): A	Lat: N 48.06936°	Long: W 123.05302°	Datum: WAS 84
Soil Map Unit Name: Yeary Series (see any correction in Soil Section)		NWI classification: None	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.) Dryer than normal			
Are vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?	Are "Normal Circumstances" present? Yes ☒ No ☐		
Are vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?	(If needed, explain any answers in Remarks)		

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ☒	No ☐	Is the Sampled Area Within a Wetland? Yes ☐ No ☒
Hydric Soil Present?	Yes ☐	No ☒	
Wetland Hydrology Present?	Yes ☐	No ☒	

Remarks: Clear sunny day

VEGETATION – Use scientific names of plants

Trees Stratum (Plot size:30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' Radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 1.64 Radius)			
1.Festuca arundinacea	35	Yes	FAC
2. Galium aparine	20	Yes	FACU
3. Festuca pratensis	20	Yes	FAC
4. Cirsium arvense	20	No	FACU
5. Poa sp	5	No	FAC
6			
7.			
		100 =Total Cover	
Woody Vine Stratum (Plot size: 10' Radius)			
1.			
2.			
		=Total Cover	
% Bare Ground in Herb Stratum			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: (A) 2

Total; Number of dominant Species Across All Strata: (B) 3

Percent of Dominant Species That Are OBL, FCW, or FAC: 33 67

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species		X 1 =
FACW species		X 2 =
FAC species		X 3 =
FACU species		X 4 =
UPL Species		X 5 =
Column totals	(A)	(B)
Prevalence index = B/A =		

Hydrophytic Vegetation Indicators:

☐ 1. Rapid Test for Hydrophytic Vegetation

☒ 2.Dominance Test is >50%

☐ 3. Prevalence Index is ≤3.0[1]

☐ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ 5. Wetland Non-Vascular Plants[1]

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: **Galium on site is aparine because it has leaves with short-pointed tips. The green color in this area is the growing of the Galium on the site**

SOIL

Sampling Point: 4

Profile Description: (Describe t o the depth needed to document the indicators or confirm the absence of indicators)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Textures	Remarks
0-4	**10YR 3/2**						**l**	**2 f gr structure; 3 vf, & 2 m, c roots; cw bndy**
4-10	**10YR 5/3**						**lc**	**1 f sbk part to 2 f gr structure; 1vf, c roots; cw bndy**
10-15	**10YR 5/3**		**2.5Y 5/2**	**<1**	**D**	**M**	**glc**	**2 f sbk part to 2 f gr structure; 1vf, f roots; gw bndy**
15-20	**2.5Y 5/3**		**10YR 7/1**	**15**	**D**	**M**	**gls**	**3 f sbk structure; aw bndy**
			7.5YR 3/4	**<1**	**C**	**RC**		
20								**Dense hard compact till**

[1]**Type:** C=Concentrations, D=Depletion. RM=Reduced Matrix. CXS=Covered or Coated Sand Grains. [2]**Location**: Pl=Pore lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (SS)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks [3]

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type:**Dense compact till.**
Depth (inches): **20 inches**

Hydric Soil Present? Yes ☐ No ☒

Remarks: **The soil site is just at the edge of the drainage ditch from the retention pond. It is more gravelly and sandy than the Yeary Series. The value colors are to high for the soil to be a depleted soil starting at 15 inches. This site could be considered to have an Oxyaquic conditions as the soil may be saturated and have a high water table but is oxygenated and cannot provide sufficient reduction to make a hydric soil.**

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except **MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1`) **(LRR A)**
- ☐ Other (Explain in remarks)

Secondary Indicators (2 or more required)

- Water Stained Leaves (B9) **(MRLA 1, 2, 4A and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC=Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Year is dryer than normal but soils do not have wetland hydric soil Indicators. A retention pond is up slope from the site The over flow of the retention flows through a shallow vegetated drainage ditch 5 feet north of this site.. The site is probably saturated and has a water table longer than the other site but still has to high of chroma colors to allow for it to be a hydric soil**

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Regions

Project/Site: MARINERS OUTLOCK PRE 18-005	City/County: /Sequim/Clallam	Sampling Date: OCT 30, 2018	
Applicant/Owner: Mariners Investors	State: WA	Sampling Point: 5	
Investigator(s): W. David Loggy, Loggy Soil & Wetland Consulting	Section 27, Township 30N, Range 03W:		
Landform (hillslope, terrace, etc): Sloping Terrace	Local relief (concave, convex, none): Concave		Slope (%) 5
Subregion (LRR): A	Lat: N 48.06938°	Long: W 123.05376°	Datum: WAS 84
Soil Map Unit Name: Yeary Series (see any correction in Soil Section)		NWI classification: None	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.) **Dryer than normal**			
Are vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?	Are "Normal Circumstances" present? Yes ☒ No ☐		
Are vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?	(If needed, explain any answers in Remarks)		

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ☒	No ☐	Is the Sampled Area Within a Wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks:

VEGETATION – Use scientific names of plants

Trees Stratum (Plot size:30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' Radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 1.64 Radius)			
1. Lolium perenne	30	Yes	FAC
2. Agrostis sp	20	Yes	FAC
3. Cirsium arvense	20	Yes	FACU
4. Festuca pratensis	20	No	FACU
5. Plantago major	5	No	FACU
6. Galium aparine	5	No	FACU
7.			
		100 =Total Cover	
Woody Vine Stratum (Plot size: 10' Radius)			
1.			
2.			
		=Total Cover	
% Bare Ground in Herb Stratum			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: (A) 2

Total; Number of dominant Species Across All Strata: (B) 3

Percent of Dominant Species That Are OBL, FCW, or FAC: (A/B) 67

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species		X 1 =
FACW species		X 2 =
FAC species		X 3 =
FACU species		X 4 =
UPL Species		X 5 =
Column totals	(A)	(B)
Prevalence index = B/A =		

Hydrophytic Vegetation Indicators:

☐ 1. Rapid Test for Hydrophytic Vegetation

☒ 2.Dominance Test is >50%

☐ 3. Prevalence Index is ≤3.0[1]

☐ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ 5. Wetland Non-Vascular Plants[1]

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: Galium on site is aparine because it has leaves with short-pointed tips.

SOIL

Sampling Point: 5

Profile Description: (Describe t o the depth needed to document the indicators or confirm the absence of indicators)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Textures	Remarks
0-6	**10YR 4/3**						**gsl**	**1 m sbk part to 2 vf, f gr structure; 2 vf, m, c roots; aw bndy**
6-12	**2.5Y4/3**						**vgls**	**1 m sbk part to 2 vf, f gr structure; 1 f roots; as bndy**
12								**Large rock or bedrock**

[1]**Type:** C=Concentrations, D=Depletion. RM=Reduced Matrix. CXS=Covered or Coated Sand Grains. [2]**Location**: Pl=Pore lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (SS)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks [3]

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: **Rock or concrete pad**
Depth (inches): **12 inches**

Hydric Soil Present? Yes ☐ No ☒

Remarks: **The soil and this site is too shallow and to much gravel in the matrix to be Yeary Series**

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except **MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1`) **(LRR A)**
- ☐ Other (Explain in remarks)

Secondary Indicators (2 or more required)

- Water Stained Leaves (B9) **(MRLA 1, 2, 4A and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC=Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Year is dryer than normal but soil do not have wetland hydrology Indicators. The site is very gravelly and sandy and surface and ground water probably passes through the soil very rapidly. The site is at the toe slope of the drainage ditch and where the ditch ends and where surface and sub-ground flow are dissipated over a larger area.**

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Regions

Project/Site: MARINERS OUTLOCK PRE 18-005		City/County: /Sequim/Clallam	Sampling Date: NOV 5, 2018
Applicant/Owner: Mariners Investors		State: WA	Sampling Point: 6
Investigator(s): W. David Loggy, Loggy Soil & Wetland Consulting		Section 27, Township 30N, Range 03W:	
Landform (hillslope, terrace, etc): Sloping Terrace		Local relief (concave, convex, none): Concave	Slope (%) 5
Subregion (LRR): A	Lat: N 48°4' 10.164"	Long: W 123° 3' 11.4"	Datum: WAS 84
Soil Map Unit Name: Yeary Series (see any correction in Soil Section)			NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.) Dryer than normal			
Are vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?		Are "Normal Circumstances" present? Yes ☒ No ☐	
Are vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?		(If needed, explain any answers in Remarks)	

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ☐	No ☒	Is the Sampled Area Within a Wetland? Yes ☐ No ☒
Hydric Soil Present?	Yes ☐	No ☒	
Wetland Hydrology Present?	Yes ☐	No ☒	
Remarks:			

VEGETATION – Use scientific names of plants

Trees Stratum (Plot size:30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' Radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 1.64 Radius)			
1. Leucanthemum vulgare	50	Yes	FACU
2. Festuca pratensis	20	Yes	FACU
3. Festuca rubra	20	No	FAC
4.			
5.			
6.			
7.			
		80 =Total Cover	
Woody Vine Stratum (Plot size: 10' Radius)			
1.			
2.			
		=Total Cover	
20 % Bare Ground in Herb Stratum			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: (A) 0

Total; Number of dominant Species Across All Strata: (B) 2

Percent of Dominant Species That Are OBL, FCW, or FAC: (A/B) 0

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species		X 1 =
FACW species		X 2 =
FAC species		X 3 =
FACU species		X 4 =
UPL Species		X 5 =
Column totals	(A)	(B)
Prevalence index = B/A =		

Hydrophytic Vegetation Indicators:

☐ 1. Rapid Test for Hydrophytic Vegetation

☐ 2.Dominance Test is >50%

☐ 3. Prevalence Index is ≤3.0[1]

☐ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ 5. Wetland Non-Vascular Plants[1]

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe t o the depth needed to document the indicators or confirm the absence of indicators)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Textures	Remarks
0-4	**2.5Y 4/3**		**10YR 4/4**	**<2**	**C**		**cl**	**3 m sbk structure, 2 f roots; cw bndy,**
4-8	**2.5Y 5/3**		**10YR 4/4**	**<2**		**M**	**sicl**	**3 m sbk structure; 1 c, & 1 f roots; cw bndy**
8-13	**2.5Y 5/3**		**10YR 4/3**	**<2**	**C**	**M, P**	**sic**	**3 c sbk structure; 1 f roots; gw bndy**
13-15	**2.5Y 5/1**		**10YR 4/4**	**>2 <20**	**C**	**M**	**sil**	**Hard dry till, chip outs by spade to broken sbk structure parting to granular particles, no roots.**

[1]**Type:** C=Concentrations, D=Depletion. RM=Reduced Matrix. CXS=Covered or Coated Sand Grains. [2]**Location**: Pl=Pore lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (SS)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks [3]

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: **glacial till**
Depth (inches):**13 inches**

Hydric Soil Present? Yes ☐ No ☒

Remarks:
/The soil at this site is not the yearly.

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except **MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1`) **(LRR A)**
- ☐ Other (Explain in remarks)

Secondary Indicators (2 or more required)

- Water Stained Leaves (B9) **(MRLA 1, 2, 4A and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC=Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The fall rainfall period is less than normal fall rainfall years. The site probably has short periods of soil saturation and a water table at the soil and till interface.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Regions

Project/Site: MARINERS OUTLOCK PRE 18-005	City/County: /Sequim/Clallam	Sampling Date: Dec 3, 2018	
Applicant/Owner: Mariners Investors	State: WA	Sampling Point 7	
Investigator(s): W. David Loggy, Loggy Soil & Wetland Consulting	Section 27, Township 30N, Range 03W:		
Landform (hillslope, terrace, etc): Depression, sloping side & gradient	Local relief (concave, convex, none): Concave		Slope (%) see remark
Subregion (LRR): A	Lat: N 48.06986°	Long: W 123.05249°	Datum: WAS 84
Soil Map Unit Name: Yeary Series (see any correction in Soil Section)		NWI classification: None	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.) Dryer than normal			
Are vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?	Are "Normal Circumstances" present? Yes ☒ No ☐		
Are vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?	(If needed, explain any answers in Remarks)		

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ☐	No ☒	Is the Sampled Area Within a Wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Lower precipitation for time of year. Concave depressional shaped drainage. Side slope of north facing slope of depression is 20 % slope with a 15% down slope gradient.

VEGETATION – Use scientific names of plants

Trees Stratum (Plot size:30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' Radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 1.64 Radius)			
1. Dactylis glomerata	25	Yes	FACU
2Bromus sitchensis	25	Yes	FACU
3. Lolium multiflorum	15	Yes	FACU
4. Lolium perenne	15	Yes	FAC
5. Festuca pratensis	10	No	FACU
6. Galium aparine	5	No	FACU
7. Vicia americana	5	No	FACU
		100 =Total Cover	
Woody Vine Stratum (Plot size: 10' Radius)			
1.			
2.			
		=Total Cover	
20 % Bare Ground in Herb Stratum			

Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC:		(A) 1
Total; Number of dominant Species Across All Strata:		(B) 4
Percent of Dominant Species That Are OBL, FCW, or FAC:		(A/B) 20
Prevalence Index worksheet: Total % Cover of: Multiply by:		
OBL species		X 1 =
FACW species		X 2 =
FAC species		X 3 =
FACU species		X 4 =
UPL Species		X 5 =
Column totals	(A)	(B)
Prevalence index = B/A =		

Hydrophytic Vegetation Indicators:

☐ 1. Rapid Test for Hydrophytic Vegetation

☐ 2.Dominance Test is >50%

☐ 3. Prevalence Index is ≤3.0[1]

☐ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ 5. Wetland Non-Vascular Plants[1]

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point7

Profile Description: (Describe t o the depth needed to document the indicators or confirm the absence of indicators)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Textures	Remarks
0-2	**10YR 3/3**						**ls**	**2 f granular structure; 3vf, f; 1 m roots; cw bndy.**
2-7	**2.5Y 4/3**						**grsl**	**1 m sbk structure parting to 2 f granular; 2 f roots; aw bndy.**
7-12	**2.5Y 4/3**						**vgrls**	**1 m sbk structure parting to 2 f granular; aw bndy**
12-13	**2.5Y 4/3**						**vgrls**	**Massive hard till, chip outs by spade to broken 2 f sbk structure; 2% slones**

[1]**Type:** C=Concentrations, D=Depletion. RM=Reduced Matrix. CXS=Covered or Coated Sand Grains. [2]**Location**: Pl=Pore lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (SS)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks [3]

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: **glacial till**
Depth (inches):**13 inches**

Hydric Soil Present? Yes ☐ No ☒

Remarks:
/The soil at this site is not the yearly.

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except **MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1`) **(LRR A)**
- ☐ Other (Explain in remarks)

Secondary Indicators (2 or more required)

- Water Stained Leaves (B9) (**MRLA 1, 2, 4A and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC=Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The fall rainfall period is less than normal fall rainfall years.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Regions

Project/Site: MARINERS OUTLOCK PRE 18-005	City/County: /Sequim/Clallam	Sampling Date: Dec 3, 2018	
Applicant/Owner: Mariners Investors	State: WA	Sampling Point: 8	
Investigator(s): W. David Loggy, Loggy Soil & Wetland Consulting	Section 27, Township 30N, Range 03W:		
Landform (hillslope, terrace, etc.): Depression, sloping side & down hill gradient	Local relief (concave, convex, none): Concave		Slope (%) see remark
Subregion (LRR): A	Lat: N 48.06998°	Long: W 123.05214°	Datum: WAS 84
Soil Map Unit Name: Yeary Series (see any correction in Soil Section)		NWI classification: None	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.) Dryer than normal			
Are vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?	Are "Normal Circumstances" present? Yes ☒ No ☐		
Are vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?	(If needed, explain any answers in Remarks)		

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ☐	No ☒	Is the Sampled Area Within a Wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Lower precipitation for time of year. Concave depressional shaped drainage. Side slope of north facing slope of depression is 20 % slope with a 15% down slope gradient.

VEGETATION – Use scientific names of plants

Trees Stratum (Plot size:30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' Radius)			
1.Rubus procerus	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 1.64 Radius)			
1.Festuca pratensis	40	Yes	FACU
2. Lolium multiflorum	25	Yes	FACU
3. Lolium perenne	15	Yes	FAC
4. Bromus sitchensis	10	Yes	FACU
5.			
6.			
7.			
		100 =Total Cover	
Woody Vine Stratum (Plot size: 10' Radius)			
1.			
2.			
		=Total Cover	
20 % Bare Ground in Herb Stratum			

Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC:		(A) 1
Total; Number of dominant Species Across All Strata:		(B) 4
Percent of Dominant Species That Are OBL, FCW, or FAC:		(A/B) 20

Prevalence Index worksheet: Total % Cover of:	Multiply by:	
OBL species		X 1 =
FACW species		X 2 =
FAC species		X 3 =
FACU species		X 4 =
UPL Species		X 5 =
Column totals	(A)	(B)
Prevalence index = B/A =		

Hydrophytic Vegetation Indicators:

- ☐ 1. Rapid Test for Hydrophytic Vegetation
- ☐ 2.Dominance Test is >50%
- ☐ 3. Prevalence Index is ≤3.0[1]
- ☐ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5. Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point 8

Profile Description: (Describe t o the depth needed to document the indicators or confirm the absence of indicators)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Textures	Remarks
0-4	**7.5YR 3/2**						**l**	**2 vf granular structure; 2, f, m roots; gw bndy.**
4-12	**10YR 3/3**						**grls**	**2 f granular structure; 1 f roots; gw bndy.**
12-16	**2.5Y 5/3**		**10YR 4/4**	**<1**	**f C**	**M**	**grls**	**1 f sbk structure; 1 f roots; gw bndy, Layer may be ash deposit.**
16-20	**7.5 YR 2.5/3**						**grls**	**1 m sbk structure.**

[1]**Type:** C=Concentrations, D=Depletion. RM=Reduced Matrix. CXS=Covered or Coated Sand Grains. [2]**Location**: Pl=Pore lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (SS)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks [3]

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: **glacial till**
Depth (inches):**13 inches**

Hydric Soil Present? Yes ☐ No ☒

Remarks:
/The soil at this site is not the yeary.

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except **MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1`) **(LRR A)**
- ☐ Other (Explain in remarks)

Secondary Indicators (2 or more required)

- Water Stained Leaves (B9) **(MRLA 1, 2, 4A and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC=Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The fall rainfall period is less than normal fall rainfall years.

APPENDIX III

SOILS CHARACTERISTICS COMPARISON TO HYDRIC SOIL CRITERIA FOR LRR A

PROJECT SITE SOILS COMPARISON TO HYDRIC SOIL INDICATORS

The soils are mineral soils so there is no reason to compare them any organic hydric soil indicators. The mineral soils are compared against the groups "All Soils" used for any soil regardless of texture and the "Loamy and Clayey Soils" for soil layers of loamy very fine sand and finer textures (Indicators) for the USDA Land Resource Region (LRR) A.

HYDRIC SOIL INDICATORS

A11. –Depleted Below Dark Surface.

The soils do not have a dark surface and or a layer with a depleted or gleyed matrix that has 60 % or more chroma of 2 or less starting at a depth ≤ 30 cm (12 inches) from the soil surface.

A12.-Thick Dark Surface.

The soils do not have a thick black layer 30 cm (12 inches) thick from the surface and do not have a layer at least 15 cm (6 inches) thick with a depleted or gleyed matrix that has 60 percent or more chroma of 2 starting below 30 cm (12 inches) of the surface

F1.-Loamy Gleyed Matrix
The soils do not have a gleyed matrix that occupies 60 percent or more of a layer starting at a depth ≤ 30 cm (12 inches) from the soil surface.

F3.-Depleted Matrix

The soils do not have a depleted Matrix with 60 percent or more chroma of 2 or less and that has a minimum thickness of either:

a. 5 cm (2 inches) if the 5 cm starts at a depth ≤ 10 cm (4 inches) from the soil surface, or
b. 15 cm (6 inches), starting at a depth of ≤ 25 cm (10 inches) from the soil surface.

F6.-Redox Dark Surface

The soils do not have a layer that is at least 10 cm (4 inches) thick, starting at a depth ≤ 29 cm (8 inches) from the mineral surface and has:

a. Matrix value of 3 or less and chroma of 1 or less and 2 percent or more distinct or prominent redox concertations occurring as soft masses or pore linings, or:
b. Matrix value of 3 or less and chroma of 2 or less and 5 percent or more distinct or prominent redox concertations occurring as soft masses or pore linings.

F7.-Depleted Dark Surface

The soils do not have redox depletions with value of 5 or more and chroma of 2 or less in a layer that is at least 10 cm (4 inches) thick, starting at a depth of ≤ 20 cm (8 inches) from the mineral soil surface and has:

a. Matrix value of 3 or less and chroma of 1 or less and 10 percent or more redox depletions or:
b. Matrix value of 3 or less and chroma2 or less and 20 percent or more redox depletions...

F8.-Redox Depressions.

The soils are not located in an enclosed depression subject to ponding, having 5 percent or more district or prominent redox concentrations occurring as soft masses or pore linings in a layer the is 5 cm (2 inches) or thicker and starts at a depth ≤ 10 cm (4 inches) from the soil surface.

F10.-Marl.

The soils do not have a layer of marl with a value of 5 or more and chroma 2 or less starting at a depth ≤10 cm (4 inches) from the soil surface.

APPENDIX IV

ADDITIONAL PHOTOS OF PROJECT SITE

Looking west from west depression at Himalayan black-Berry on top of retention pond dike.

Station 4 in west swale landform

Station 5 at the toe of west swale landform

Looking west at the slope landform with shrubs mark-Ing the edge of the retention pond.

Looking cross slope at stations 1-3 on upper one quarter of the west swale landform. Light tan grass area is the slope landform.

Looking up at the start of east swale landform from Station 7.

Looking down slope from the center of the east swale landform from Station 7

Looking down slope about the middle of the length of the east swale Landform. Stake is station 7.